

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of: )  
HAMID S. ABROY )  
 ) Conf. No.: 4701  
 )  
Serial No. 10/003,370 )  
 ) Group Art.: 3637  
Filed: November 15, 2001 )  
 ) Examiner: FITZGERALD, John P.  
Title: ARC STACK HOUSING )  
WITH ARC PLATE )  
LATCHING MECHANISM )

BRIEF ON APPEAL UNDER 37 C.F.R. §1.192(d)

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Commissioner for Patents  
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Dear Sir:

Please consider the following remarks, which are submitted under 37 C.F.R. §1.192:

**I. REAL PARTY OF INTEREST**

The real parties of interest are the named inventors and Square D Company, a corporation of the state of Delaware having a principal place of business at the address indicated below and being the assignee to all rights of any subsequent patent issuing from this application:

SQUARE D COMPANY  
1415 South Roselle Road  
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Karen Pyka

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCE**

**PATENT APPLICATION**

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**BRIEF ON APPEAL UNDER 37 C.F.R. §1.192**

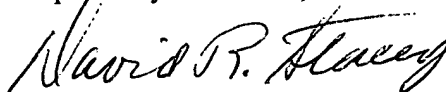
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Dear Sir:

Applicant hereby authorizes the Commissioner to charge Deposit Account 19-3875 (LEX-80) in the amount of \$330.00, to cover the filing fee of the attached Brief on Appeal. Attached is a duplicate copy of this page for charging our Deposit Account.

Respectfully submitted,



David Russell Stacey, Reg. No. 33,794  
Attorney for Applicant



PATENT  
USSN: 10/003,370

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TABLE OF CONTENTS

I.	REAL PARTY OF INTEREST .....	3
II.	RELATED APPEALS AND INTERFERENCES .....	4
III.	STATUS OF THE CLAIMS .....	4
IV.	STATUS OF THE AMENDMENTS .....	4
V.	SUMMARY OF THE INVENTION .....	5
VI.	THE ISSUES PRESENTED FOR REVIEW .....	5
VII.	GROUPING OF CLAIMS .....	6
VIII.	ARGUMENTS .....	6

A. The rejection of claim 6 under 35 U.S.C. §102(b) as being anticipated by Uchida et al. (U.S. Patent No. 5,589,672) is Erroneous. ....6

B. The Rejection of Claims 1, 2 and 11 under 35 U.S.C. §103(a) Based on Uchida et al. (U.S. Patent No. 5,589,672) is Erroneous Since the Cited References Do Not Disclose or Suggest an Arc Plate Latching Mechanism as Claimed in the Rejected Claims. ....8

C. The Rejection of Claims 3-5 and 7-10 under 35 U.S.C. §103(a) Based on Uchida et al. (U.S. Patent No. 5,589,672) in view of Madock (U.S. Patent No. 5,645,329) is Erroneous Since the Cited References Do Not Disclose or Suggest an Arc Plate Latching Mechanism as Claimed in the Rejected Claims. ....13

D. Standing Alone, None of the Prior Art References Can Support Examiner Fitzgerald's Rejections. ....18

IX. CONCLUSION.....19

APPENDIX OF THE APPEALED CLAIMS

UNITED STATES PATENT NO. 5,589,672

UNITED STATES PATENT NO. 4,612,426

**II. RELATED APPEALS AND INTERFERENCES**

There are no related appeals and interferences.

**III. STATUS OF THE CLAIMS**

Claim 6 stands rejected under 35 U.S.C. §102(b), as being anticipated by Uchida et al. (U.S. Patent No. 5,589,672).

Claims 12 and 13 stand rejected under 35 U.S.C. §102(b), as being anticipated by Uchida et al. (U.S. Patent No. 5,589,672) and Maier et al. (U.S. Patent No. 4,612,426).

Claims 1, 2 and 11 stand rejected under 35 U.S.C. §103(a), as being unpatentable over Uchida et al. (U.S. Patent No. 5,589,672).

Claims 3-5, and 7-10 stand rejected under 35 U.S.C. §103(a), as being unpatentable over Uchida et al. (U.S. Patent No. 5,589,672) in view of Madock (U.S. Patent No. 5,645,329).

Claims 1-11 are under appeal in this brief.

**IV. STATUS OF THE AMENDMENTS**

The applicant's amendment A, filed on April 15, 2003, amending claims 1 and 5, to overcome a rejection under 35 U.S.C. §112, second paragraph, amending claims 6 and 11, to more precisely define the invention and applicants arguments to overcome the Examiner's rejections under 35 U.S.C. §102 and 35 U.S.C. §103, has been entered by Examiner Fitzgerald.

The applicant's Rule 1.116 amendment filed on September 14, 2003, amending claim 2 to more precisely define the action of the stop member and claim 11 to include a restriction of original claim 9 (the back stop being in spaced relation to the first wall), canceling claims 12 and 13, and presenting further arguments to overcome the Examiner's rejections under 35 U.S.C. §102 and 35 U.S.C. §103, has not been entered by Examiner Fitzgerald base on grounds that, "the back stop being in spaced relation to the first member" raises new issues that would require further consideration and/or search.

**V. SUMMARY OF THE INVENTION**

The present invention, as disclosed on pages 1-5 of the specification and illustrated in figures 1-4 of the application under appeal, provides an arc stack housing **102** having resilient and deformable stop members **218** and latching members **224**, for releasably securing a plurality of arc plates **402** within the arc stack housing. The housing includes two substantially parallel side walls **112** and **114**. Each side wall includes a plurality of slots **216**, which can be defined in the side wall or by securing ledges **210** extending outwardly from the side wall. The slots of one side wall are in opposed relationship to the slots of the other side wall such that an arc plate can be slidably received in a pair of opposed slots. The stop and latching members are located at opposite ends of a slot and are spaced apart from the side wall (see Figures 1 and 3). When an arc plate is slidably and fully installed in a pair of opposed slots of the arc housing, the leading edge **412** engages the stop member and the trailing edge **416** engages the latching member of that pair of slots. The stop member and the latching member are both slightly deformed in a spring like manner, thereby captivating the arc plate in the slot between them.

**VI. THE ISSUES PRESENTED FOR REVIEW**

Whether Examiner Fitzgerald erroneously rejected claim 6 as being anticipated by Uchida et al.?

Whether Examiner Fitzgerald erroneously rejected each of the claims 1, 2 and 11 as being unpatentable over Uchida et al.?

Whether Examiner Fitzgerald erroneously rejected each of the claims 3-5 and 7-10 as being unpatentable over Uchida et al. in view of Madock?

## VII. GROUPING OF CLAIMS

The 35 U.S.C. §102(b) rejection of claim 6, with respect to Uchida et al. can be treated as one group.

The 35 U.S.C. §103(a) rejection of claims 1, 2 and 11, with respect to Uchida et al. do not stand or fall together. The claims are of varying scope and their differences are discussed below under the “Argument” section. The claims should be treated as two group: group one being claims 1 and 2 and group two being claim 11.

The 35 U.S.C. §103(a) rejection of claims 3-5 and 7-10, with respect to Uchida et al. in view of Madock do not stand or fall together. The claims are of varying scope and their differences are discussed below under the “Argument” section. The claims should be treated as two groups: group one being claims 3-5 and group two being claim 7-10.

## VIII. ARGUMENTS

### A. The Rejection of Claim 6 under 35 U.S.C. §102(b) Based on Uchida et al. Is Erroneous Since the Cited Reference Does Not Teach or Suggest an Arc Stack Housing and Latching Mechanism As Set Forth in the Rejected Claim.

Examiner Fitzgerald has rejected Claim 6 under 35 U.S.C. § 102(b) as being anticipated by Uchida et al., U.S. Patent Number 5,589,672. To anticipate, “the reference must teach every aspect of the claimed invention either explicitly or impliedly. Any feature not directly taught must be inherently present.” (M.P.E.P. 706.02). “A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. V. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987) (M.P.E.P. 2131). “The identical invention must be shown in as complete detail as contained in the ... claim.” *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989) (M.P.E.P. 2131). “The elements must be arranged as required by the claim, but this is not an *ipsissimis verbis* test, i.e., identity of terminology is not

required.” *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990) (M.P.E.P. 2131).

Applicant agrees that Uchida teaches a circuit breaker having provisions for supporting arc plates, wherein some features are similar, but not identical, to certain features of the present invention. In the Detailed Action of the Final Office Action, Examiner Fitzgerald has provided modified versions of Uchida’s Figures 2, 4, 8(B), 9(B), 10 and 12(B), which include the Examiner’s own reference numerals and descriptions for certain elements of Uchida’s arc housing. Applicant agrees with Examiner Fitzgerald’s suggestion in paragraph 2 of the Action, that his elements **S1** and **S2** represent slots formed in the first and second side walls **14a**. Examiner Fitzgerald also suggests that his element **C**, which is not discussed at all by Uchida, is a back stop member. However, it can not be a back stop member secured in spaced relationship to the first wall, as suggested by Examiner Fitzgerald and as defined in claim 6 of the present invention. It is clearly obvious from Examiner Fitzgerald’s Figures 4 and 9(B), that element **C** is the terminating end of slots **S1** and **S2**, and therefore is defined within the side wall **14a** itself, *not* in spaced relation to the side wall. Examiner Fitzgerald also suggests that Uchida “further discloses an additional embodiment having resilient stop members (21c) (Figs. 12A-12D) with tabs (21f) engaging the first end of the arc plates, fixing them in place.” Uchida does not teach or suggest that element **21c** is a resilient stop member with tabs **21f** engaging the first end of the arc plates to fix them in place. Uchida’s element **21c**, shown only in Figures 8A and 9B, is defined as “a rectangular blocking board 21c closing an opening between the pressing boards 21a through a space in the front and rear directions” (Col.8, lines 31-33). Uchida, in Column 8, lines 38-39, describes element **21f** as “a pair of hooks 21f extending from the upper ends of the pressing board 21a.” Uchida further defines the function of these “hooks” **21f** in Column 8, lines 48-50, as “engaging steps 14f are formed to fit to the hooks 21f on the protection board 21 on the upper part of the side wall 14a.” Uchida’s Figure 8(B) clearly shows the relationship between elements **21c** and **21f**, while Figure 9(B) shows the proper relationship of these two elements with respect to the arc plates **2** and side walls **14a**. Uchida does not teach or suggest that his blocking board **21c** is a resilient stop member, or that his hooks **21f** engage or in any way contacts his arc plates **2**, nor are they a part of or attached to the blocking board **21c**. Further, Examiner Fitzgerald’s element **C**, being a terminating end of a slot formed in the wall **14a**, can not be resilient unless the material from which the wall **14a** is constructed is resilient (elastic). One skilled in the art would recognize that this is not desirable

since the arc stack wall must contain the gas pressure developed during the opening of the electrical contacts of a switch or circuit breaker. For the reasons stated above, at least three defining elements of claim 6, a backstop being both resilient and secured in spaced relation to the side wall and a locking member being secured in spaced relation to the side wall, are not taught or suggested by Uchida. Further, the elements of Uchida are not arranged as required by claim 6. Therefore, Uchida does not meet the requirements set forth in M.P.E.P. 706.02 or M.P.E.P. 2131 for an anticipation rejection of claim 6 under 35 U.S.C. § 102(b).

**B. The Rejection of Claims 1, 2 and 11 under 35 U.S.C. §103(a) Based on Uchida et al. Is Erroneous Since the Cited Reference Does Not Teach or Suggest an Arc Stack Housing and Latching Mechanism as Claimed in the Rejected Claims.**

Examiner Fitzgerald has rejected Claims 1, 2 and 11 under 35 U.S.C. § 103(a) as being unpatentable over Uchida et al. M.P.E.P. 706.2(j) states that three basis criteria must be met for a *prima facie* obviousness rejection of claims under 35 U.S.C. §103(a). First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on the applicant's disclosure. M.P.E.P. 2142 states the following with respect to *prima facie* obviousness rejections: "Knowledge of applicant's disclosure must be put aside in reaching this determination, yet kept in mind in order to determine the 'differences,' conduct the search and evaluate the 'subject matter as a whole' of the invention. The tendency to resort to 'hindsight' base upon applicant's disclosure is often difficult to avoid due to the very nature of the examination process. However, impermissible hindsight must be avoided and the legal conclusion must be reached on the basis of the facts gleaned from the prior art." "The ultimate determination of patentability is based on the entire record, by a preponderance of evidence, with due consideration to the persuasiveness of any arguments and secondary evidence." *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). The legal standard of 'a preponderance of evidence' requires the evidence to be more convincing than the evidence which is



offered in opposition to it. With regard to rejections under 35 U.S.C. §103, the examiner must provide evidence which as a whole shows that the legal determination sought to be proved (i.e., the reference teaching establishing a *prima facie* case of obviousness) is more probable than not.”

“Facts established by rebuttal evidence must be evaluated along with the facts on which the conclusion of obviousness was reached, not just the conclusion itself.” *In re Eli Lilly & Co.*, 902F2d943, 14 USPQ2d 1741 (Fed. Cir. 1990). M.P.E.P. 2143.03 further states: “All words in a claim must be considered in judging the patentability of that claim against the prior art.” *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

With respect to independent claim 1, Examiner Fitzgerald has suggested in paragraph 5 of the Final Action that, as in his 35 U.S.C. § 102(b) anticipation rejection of claim 6, Uchida teaches all of the elements and limitations of claim 1. Claim 1 differs from claim 6, in that it defines securing ledges “protruding from said first support member toward said second support member”, and that the securing ledges define slots adapted to receive arc plates. Webster’s New Universal Unabridged Dictionary defines the word “protrude” as “to thrust out, or forth; to cause to move outward or to project” and “to jut out”. Examiner Fitzgerald suggests that his slots **S1** and **S2**, which were formed in the side walls **14a** in his rejection of claim 6, are now defined by securing ledges (his reference numerals **A1**, **A2**, **B1** and **B2** of modified Figure 2) that protrude from side walls **14a**. Uchida’s Figures 7(A) and particularly sectional view 7(B) provide a more accurate view wherein the slots **15** are obviously molded into the side walls **14a**, and therefore can not be “protruding from” the side wall, as defined in claim 1, and shown in Figures 1 and 3 of the present application. Therefore, Uchida does not teach or suggest securing ledges that protrude from the support members as defined in claim 1 of the present application. Examiner Fitzgerald has further suggested that his element **C** is the stop member engaging the first end of the arc plate **2** and Uchida’s element **21g** is the locking element engaging the second end of the arc plate **2**. However, the stop member, as defined in claim 1, must be resilient. Examiner Fitzgerald has not addressed this restriction in his rejection of claim 1. His element **C**, as shown in modified Figures 4 and 9(B), is clearly the terminating end of the slot **15**, which is molded into the side wall **14a**, and therefore, cannot be resilient unless the material of the insulator **14** is soft or pliable enough to be elastic. One

skilled in the art would understand that an elastic arc plate housing could cause an unsafe condition in that flexing of the housing caused by gas pressure developed during current interruption could allow displacement of the arc plates. Such displacement could cause a malfunction of the switch or circuit breaker, or at least improper operation of the arc plates, and is therefore not acceptable. Examiner Fitzgerald's rejection of claim 1 does not meet the basic requirements for an obviousness rejection under 35 U.S.C. § 103 as required in M.P.E.P. 706.2(j) and M.P.E.P. 2143.03

With respect to claim 2, being dependent from claim 1, claim 2 will be allowable according to M.P.E.P. 2143.03, if claim 1 is found to be nonobvious under 35 U.S.C. § 103. Examiner Fitzgerald has specifically indicated, that with "regards to claim 2, Uchida et al. further discloses an additional embodiment having resilient stop members (21c) (Figs. 12A-12D) with tabs (21f) engaging the first end of the arc plates, fixing them in place." Claim 2 also includes a restriction of being "deformable", which has not been addressed by Examiner Fitzgerald. Uchida does not teach or suggest that element **21c** is a resilient stop member with tabs **21f** engaging the first end of the arc plates **2** to fix them in place. Uchida's element **21c**, shown only in Figures 8A and 9B, is defined as "a rectangular blocking board 21c closing an opening between the pressing boards 21a through a space in the front and rear directions" (Col.8, lines 31-33). Uchida, in Column 8, lines 38-39, describes element **21f** as "a pair of hooks 21f extending from the upper ends of the pressing board 21a." He further defines the function of these "hooks" **21f** in Column 8, lines 48-50, as "engaging steps 14f are formed to fit to the hooks 21f on the protection board 21 on the upper part of the side wall 14a." Uchida's Figure 8(B) clearly shows the relationship between elements **21c** and **21f**, while Figure 9(B) shows the proper relationship of these two elements with respect to the arc plates **2** and side walls **14a**. Uchida does not teach or suggest that his blocking board **21c** is resilient, deformable or a stop member, or that his hooks **21f** engage the arc plates **2** in any way, nor are they a part of or attached to the blocking board **21c**. Examiner Fitzgerald has further suggested that "it would have been obvious to one having ordinary skill in the art at the time the invention was made to reverse the resilient nature of the back stop with that of the locking member, since it has been held that a mere reversal of the essential working parts of a device involves only routine skill in the art. *In re Einstein*, 8 USPQ 167." The applicant must assume that Examiner Fitzgerald is referring to Uchida's element **21c** as the resilient back stop, not his back stop **C**. *In re Einstein* and the current reference *In re Gasda*, 219 F.2d 449, 104 USPQ 400 (CCPA 1955) (M.P.E.P. 2144.04 VI)

are specifically directed to a situations wherein two directly interacting elements (essential working parts), A and B, of the appellant's invention, are arranged such that element A operates element B. Significantly identical elements A and B, of the prior art reference, are arranged such that element B operates element A. Thus the appellant's invention is a "mere reversal of essential working parts". In Examiner Fitzgerald's suggested "reversal of essential working parts", Uchida's blocking board **21c** does not interact with, nor was it intended to interact with his projections **21g**. Neither Einstein nor Gasda suggest that parts which do not or were not intended to interact with each other in the prior art reference would be an obvious "reversal of essential working parts" for one having ordinary skill in the art. Therefore, Examiner Fitzgerald's basis for the obviousness rejection of claim 2 is unfounded. Further, since Uchida's blocking board **21c** is neither a resilient stop member nor a resilient locking member, there is no "essential working member", which meets the claimed limitation of being "resilient" that can be reversed.

With respect to independent claim 11, Examiner Fitzgerald has suggested that Uchida teaches all of the elements and limitations of claim 11, "except for the back stop being resilient." In his rejection, Examiner Fitzgerald has, as in his rejection of claim 2, suggested that it would be obvious for one having ordinary skill in the art to reverse the resilient nature of the backstop (Examiner Fitzgerald's element C in Figures 4 and 9(B)) with that of the locking member (Uchida's elements **21g** in Figure 8(B) and **22c** in Figure 12(B)), based on *In re Einstein*, 8 USPQ 167. First, Uchida's elements **21g** and **22c** are employed in two different embodiments of his invention. The protection board **21** of which **21g** is a part and the insulation partition **22** of which **22c** is a part, are not interchangeable between the two embodiments because of functional requirements of their respective pressing projections, **21g** and **22f**. The pressing projections **21g** are all of the same length (Figure 9(B)) because the location of the terminating point of the slot **15** (Examiner Fitzgerald's element C) determines the position of the grid **2** (arc plate) in the housing (Figure 9(B)). The "pressing projections **22f** are formed corresponding to the end surface positions of the vertically piled-up grids such that the protruding lengths thereof gradually increase from the top to the bottom." (Column 9, lines 38-42) (Figure 12(B)) Thus, the length of the pressing projections **22f** control the position of the grids **2** in the housing **14**. (Figure 14) Therefore, Examiner Fitzgerald's suggestion that Uchida's combined elements **21g** and **22c** are a resilient locking member is inaccurate. *In re Einstein* and the current reference *In re Gasda*, 219 F.2d 449,

104 USPQ 400 (CCPA 1955) (M.P.E.P. 2144.04 VI A.) are specifically directed to a situations wherein two directly interacting elements (essential working parts), A and B, of the appellant's invention, are arranged such that element A operates element B. Significantly identical elements A and B, of the prior art reference, are arranged such that element B operates element A. Thus the appellant's invention is a "mere reversal of essential working parts". Neither of Uchida's pressing projections, **21g** or **22f**, directly interact with, nor were they it intended to interact with Examiner Fitzgerald's back stop **C** in such a manner that any "essential working parts" could be reversed, as suggested by Examiner Fitzgerald. Neither Einstein nor Gasda suggest that parts which do not or were not intended to interact with each other in the prior art reference would be an obvious "reversal of essential working parts" for one having ordinary skill in the art. Therefore, Examiner Fitzgerald's basis for the obviousness rejection of claim 11 is unfounded. Further, although Uchida indicates that his pressing projections **21g** and **22f** press on the end surfaces of the grids **2**, he does not teach or suggest that they could be located at the terminating end (Examiner Fitzgerald's back stop **C**) of the slot **15**. Therefore, there is no teaching or suggestion in Uchida of a rearrangement of parts. M.P.E.P. 2144.04 VI C. states "The mere fact that a worker in the art could rearrange the parts of the reference device to meet the terms of the claims on appeal is not by itself sufficient to support a finding of obviousness. The prior art must provide a motivation or reason for the worker in the art, without benefit of appellant's specification, to make the necessary changes in the reference device." *Ex parte Chicago Rawhide Mfg. Co.*, 223 USPQ351, 353 (Bd. Pat. App. & Inter. 1984). A mere reversal of parts, as suggested by Examiner Fitzgerald, or a rearrangement of parts, without other engineering and design considerations relating to positioning of the grids **2**, would result in a situation wherein Uchida's grids **2** could be incorrectly positioned in the slots **15**, thereby interfering with the proper operation of the switch blades or circuit breaker contacts.

C. **The Rejection of Claims 3-5 and 7-10 under 35 U.S.C. §103(a) Based on Uchida et al. in View of Madock, Is Erroneous Since the Cited References Do Not Teach or Suggest an Arc Plate Latching Mechanism as Claimed in the Rejected Claims.**

The Examiner has rejected claims 3 and 4 under 35 U.S.C. § 103(a) as being unpatentable over Uchida et al., as applied to claim 1 above, and further in view of Madock, U.S. Patent Number

5,645,329. The Examiner has indicated that Uchida discloses a housing having all of the elements of claims 3 and 4 except for integrally molding the resilient back stop member and locking member. With respect to claim 3, Examiner Fitzgerald has further suggested that it would have been obvious to one skilled in the art at the time of the invention to modify Uchida by including the integrally molded stop and locking members of Madock. Applicant contends that Examiner Fitzgerald's proposed incorporation of the desired features of Madock into the circuit breaker housing of Uchida would produce an unsafe and inoperable device. First, Uchida does not teach or suggest all of the elements and limitations of claim 1, particularly the securing ledges **210** that protrude from the support members (side walls **112**) to define the slots **216**, which receive the arc plates **402**. Second, according to Madock, the bottom wall **12** is formed from the spring **104**, retaining member **106** and cantilevered portion **108** (Column 3, lines 18-23), which includes ribs **82-90** that project upward from the wall **12** (Column 3, lines 1-3). Therefore, the resilient member (cantilevered portion **108**) is an integral part of the wall **12** and can not be secured to the securing ledges (ribs **82-90**) as suggested by Examiner Fitzgerald and required by the limitations of claim 3. Further, the configuration as taught by Madock requires that the cantilevered portion **108** be formed between slots **110** and **112** to permit deflection of the cantilevered portion. One skilled in the art would understand that such slots in the wall of an arc plate housing would permit hot gases, plasma and small metallic particles produced during the opening of electrical contacts to exit the housing without passing through the intended passage containing the arc plates. The exit of these gases or particles through the arc plate housing would result in phase to ground or phase to phase arcing, thereby causing a catastrophic failure of the switch or circuit breaker. Therefore, Examiner Fitzgerald's suggested combination of Uchida and Madock does not meet the three requirements of M.P.E.P. 2142 for *prima facie* obviousness. Since there is no teaching or suggestion in either reference for the Examiner's suggested combination, one skilled in the art would not have a reasonable expectation of success from the proposed combination and all of the claim limitations are not taught or suggested in the proposed combination. Further, M.P.E.P. 2143.01 states that "the proposed modification cannot render the prior art unsatisfactory for its intended purpose". As indicated above, incorporating the retaining features of Madock into the circuit breaker housing of Uchida would make render the modified Uchida device unsafe, and therefore unsatisfactory for its intended purpose.

With respect to claim 4, Examiner Fitzgerald has suggested that “forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art. *Howard v. Detroit Stove Works*, 150 U.S. 164 (1893).” Applicant suggests that the housing of Madock is made of four separate parts for a reason. A mold for a molded part is generally made from two or more separable parts, which when assembled define a void in the shape of the part to be molded. The molding material is injected into the mold filling the defined void. The mold parts must then be separated to release the molded part. The design of a mold for an intricate part is difficult and requires a very high level of knowledge relating to mold design and particular qualities of the material from which the molded part will be made. It would not be unusual for one skilled in a particular art, such as electrical devices, to design an integral part which would perform the necessary function, but could not be molded as an integral part because of limitations in the mold design. The device of Madock is assembled from four parts because designing a mold for making an integral housing would be extremely difficult and expensive, if not impossible. The fact that the finished device of Madock defines a void (the cavity in which CDs are stored), which includes opposed projections (the springs **104** and retaining members **106**) inside the void, would require a large number of parts to define the void for the part. This would make the cost of designing and making the mold very expensive, which would increase part cost. The same would be true of an integral arc plate housing combining the features of Uchida and Madock, as suggested by Examiner Fitzgerald. Examiner Fitzgerald has also stated some reasons for his suggested combination of Uchida and Madock. First, referring to Madock Col. 4, lines 31-34, the Examiner has suggested that it would substantially reduce the cost of manufacturing the housing. Madock specifically teaches in Col. 4, lines 31-34, that “because the two side walls 13 and 14 have the same configuration, they may be formed from the same mold thereby substantially reducing the cost of manufacturing the holder 10.” This is not a suggestion that any combination of parts into one integral part will substantially reduce manufacturing cost. In fact the complexity of the mold, as discussed above, would drive the cost up, not down. Second, referring to Madock Col.1, lines 39-42, the Examiner has suggested that the locking members **106** of Madock would allow “partial ejection of the arc plate from the housing so that it may be easily grasped by a user”. In Examiner Fitzgerald’s *Response to Arguments* paragraph 12 of the Final Office Action, he has stated that “Applicant’s arguments with respect to the Madock reference having features or capabilities not

stated as objectives of the applicant's invention is irrelevant. Additional features or capabilities of the Madock teaching, in no way hinders the structure and/or function of that structure." Applicant disagrees, Examiner Fitzgerald's suggestion that partial ejection of arc plates would be a desirable feature and therefore, a reason for his suggested modification of Uchida is not appropriate for Uchida or any switch or circuit breaker device. In fact, one skilled in the art would recognize that this is an unacceptable and dangerous operation that could cause destruction of the arc stack housing and any switch or contact to which it is attached. Partial ejection of an arc plate could cause the arc plate to interfere with the required opening and closing of a switch blade or circuit breaker contact. This could result in a catastrophic failure of the switch or circuit breaker. It also could severely injure anyone attempting to removing the arc plates. Applicant contends that there is no suggestion for the Examiner's combination in either Uchida or Madock, and further, that the suggested combination would produce a device which could not perform the intended function of Uchida, or the present invention, in a safe and dependable manner. Applicant contends that the suggested combination of Uchida and Madock does not involve only routine skill in the art. For the reasons stated above, Examiner Fitzgerald's suggested combination of Uchida and Madock does not meet the requirements of M.P.E.P. 706.2(j) and the requirements of M.P.E.P. 2143.01 for an obviousness rejection under 35 U.S.C. § 103(a).

Examiner Fitzgerald has rejected independent claim 5 under 35 U.S.C. § 103(a) as being unpatentable over Uchida et al., and Madock. Claim 5 is an independent claim having all of the restrictions of claims 1, 2 and 3. Therefore, the arguments presented above in support of claims 1, 2 and 3, are applicable to claim 5. In summary, Uchida does not teach or suggest securing ledges that protrude from the support members and define slots for receiving arc plates. There is no suggestion or motivation in Uchida, Madock or the knowledge of one of ordinary skill in the art to make Examiner Fitzgerald's suggested combination. There is no reasonable expectation of success in combining the two references to produce the claimed invention. The suggested combination does not teach or suggest all of the claimed limitations. Finally, the suggested combination would produce a device that could not safely and dependably perform the intended function of the original device. Therefore, the Examiner's suggested combination of Uchida and Madock, with respect to claim 5, does not meet the three basic requirements of M.P.E.P. 706.2(j) and the requirements of M.P.E.P. 2143.01 for an obviousness rejection under 35 U.S.C. § 103(a).

Examiner Fitzgerald has rejected claims 7 and 8, both dependent from claim 6, under 35 U.S.C. § 103(a) as being unpatentable over Uchida et al., as applied to claim 6, and further in view of Madock. Examiner Fitzgerald has suggested that Uchida teaches all of the elements of claim 6, but does not disclose the elements of claims 7 and 8. Applicant's arguments in response to the 35 U.S.C. § 102(b) rejection of claim 6 are believed to overcome the anticipation rejection claim 6. Therefore, claims 7 and 8, being dependent from claim 6, would be allowable according to M.P.E.P. 2143.03, if claim 6 is not obvious under 35 U.S.C. § 103. Further, the defining elements of claims 7 and 8 are substantially similar to those of claims 2 and 3, respectively, and Examiner Fitzgerald's rejections of the claims based on the combination of Uchida and Madock are nearly identical. Therefore, the applicant contends that the arguments presented in support of claims 2 and 3, are also applicable to the rejection of claims 7 and 8. Again, there is no teaching in either Uchida or Madock which suggest the Examiner's combination to produce the invention as claimed. Therefore, the Examiner's suggested combination of Uchida and Madock, with respect to claims 7 and 8, does not meet the three basic requirements of M.P.E.P. 706.2(j) for an obviousness rejection under 35 U.S.C. § 103(a).

The Examiner has rejected claims 9 and 10 under 35 U.S.C. § 103(a) as being unpatentable over Uchida et al., and Madock. Independent claim 9 includes all of the limitations set forth in independent claim 6 and dependent claims 7 and 8, which are substantially similar to claims 2 and 3, respectively. Therefore, applicant's arguments in response to the 35 U.S.C. § 102(b) rejection of claim 6 and the 35 U.S.C. § 103(a) rejection of claims 2 and 3 are believed to overcome the 35 U.S.C. § 103(a) rejection claim 9. Again, there is no teaching in either Uchida or Madock which suggest the Examiner's combination to produce the invention as claimed. Therefore, the Examiner's suggested combination of Uchida and Madock with respect to claim 9 does not meet the three basic requirements of M.P.E.P. 706.2(j) for an obviousness rejection under 35 U.S.C. § 103(a). Claim 10, being dependent from claim 9, is allowable according to M.P.E.P. 2143.03, if claim 9 is not obvious under 35 U.S.C. § 103.



**D. Standing Alone, None of the Prior Art References Can Support Examiner Fitzgerald's Rejection**

Independent claim 1, defines a housing for securing an arc plate, the arc plate being receive in a slot defined by securing ledges which protrude from opposed housing walls. The housing further defining resilient stop members for engaging a first end of the arc plate and a locking member for engaging a second end of the arc plate.

Independent claim 5, defines a housing for securing an arc plate, the arc plate being receive in a slot defined by securing ledges which protrude from opposed housing walls. The housing further defining resilient stop members for engaging a first end of the arc plate and a locking member attached to a securing ledge for engaging a second end of the arc plate.

Independent claim 6, defines a housing for securing an arc plate, the arc plate being receive in slots defined in opposed housing walls. The housing further defining a resilient stop member being in spaced relation to the housing wall for engaging a first end of the arc plate and a locking member being in spaced relation to the housing wall for engaging a second end of the arc plate.

Independent claim 9, defines a housing for securing an arc plate, the arc plate being receive in slots defined in opposed housing walls. The housing further defining a resilient stop member being in spaced relation to the housing wall and being deformed and in contact with said arc plate and a resilient locking member being in spaced relation to the housing wall and having a first end attached to a housing wall and a second end connected to a tab for engaging a second end of the arc plate.

Independent claim 11, defines a housing for securing an arc plate, the arc plate being receive in slots defined in opposed housing walls. The housing further defining a resilient back stop positioned at a back end of the slot and a locking member being positioned at an insertion end of the slot.

These limitations are neither taught nor suggested in the cited prior art references of Uchida or Madock. Therefore, the claimed invention is patentably distinguishable therefrom according to M.P.E.P. 2143.03 *In re Royka*, 490 F2d 981, 180 USPQ 580 (CCPA 1974). Since claims 2-4 are dependent from claim 1, claims 7-8 are dependent from claim 6 and claim 10 is depend from claim 9, they are also allowable according to M.P.E.P. 2143.03 *In re Fine*, 837 F.2d 1071, 5 USPQ2d

1596 (Fed. Cir. 1988). Therefore, the rejection of claims 1-11 is unsupported and should be reversed.

IX. CONCLUSION

Based on these arguments, it is respectfully requested that the Honorable Board of Patent Appeals and Interferences reverse (or otherwise correct) the final rejection of claims 1-11.

Respectfully submitted,



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**APPENDIX OF THE APPEALED CLAIMS**

**Claim 1.** A housing for securing an arc plate, said arc plate including a first longitudinal edge, an opposed second longitudinal edge, a notched first end, and a second end opposed to said notched first end, said housing comprising:

a first support member;

a second support member secured in spaced relation to said first support member;

a first securing ledge protruding from said first support member and toward said second support member, said first securing ledge having a lower surface;

a second securing ledge protruding from said first support member and toward said second support member, said second securing ledge having an upper surface, said first securing ledge lower surface and said second ledge upper surface defining a first slot adapted to receive said first longitudinal edge of said arc plate;

a third securing ledge protruding from said second support member and toward said first support member, said third securing ledge having a lower surface;

a fourth securing ledge protruding from said second support member and toward said first support member, said fourth securing ledge having an upper surface, said third securing ledge lower surface and said fourth securing ledge upper surface defining a second slot adapted to receive said second longitudinal edge of said arc plate;

a stop member, said stop member being resilient, said stop member engaging said first end of said arc plate; and

a locking member engaging said second end of said arc plate.

**Claim 2.** The housing of Claim 1 wherein said stop member is resilient and deformable.

**Claim 3.** The housing of Claim 1 wherein said locking member includes a resilient member and a tab, said resilient member having a first end fixedly attached to said first securing ledge and having a second end connected to said tab, said tab having an inside face for securing said arc plate in said housing.

**Claim 4.** The housing of Claim 1 wherein said first support member, said second support member, said first securing ledge, said second securing ledge, said stop member, and said locking member form an integral molded assembly.

**Claim 5.** A housing for securing an arc plate, said arc plate including a first longitudinal edge, an opposed second longitudinal edge, a notched first end, and a second end opposed to said notched first end, said housing comprising:

a first support member;

a second support member secured in spaced relation to said first support member;

a first securing ledge protruding from said first support member and toward said second support member, said first securing ledge having a lower surface;

a second securing ledge protruding from said first support member and toward said second support member, said second securing ledge having an upper surface, said first securing ledge lower surface and said ledge upper surface defining a first slot adapted to receive said first said longitudinal edge of said arc plate;

a third securing ledge protruding from said second support member and toward said first support member, said third securing ledge having a lower surface;

a fourth securing ledge protruding from said second support member and toward said first support member, said fourth securing ledge having an upper surface, said third securing ledge lower surface and said fourth securing ledge upper surface defining a second slot adapted to receive said second longitudinal edge of said arc plate;

a stop member engaging said first end of said arc plate, said stop member being resilient and deformable; and

a locking member having a resilient member and a tab, said resilient member having a first end fixedly attached to said first securing ledge and having a second end connected to said tab, said tab having an inside face in contact with said arc plate.

**Claim 6.** An apparatus for quenching an arc, said apparatus comprising:

a first wall;

a second wall secured in spaced relation to said first wall;

a first slot formed in said first wall and opening toward said second wall;

a second slot formed in said second wall and opening toward said first wall;

a back stop member secured in spaced relation to said first wall, said back stop member being resilient;

a locking member secured in spaced relation to said first wall;

an arc plate in slidable communication with said first slot and said second slot;

whereby said arc plate is secured by said first slot, said second slot, said back stop member, and said locking member.

**Claim 7.** The apparatus of Claim 6 wherein said back stop member is resilient and deformable, said back stop member being deformed and in contact with said arc plate, whereby said back stop member forces said arc plate against said locking member.

**Claim 8.** The apparatus of Claim 6 wherein said locking member includes a resilient member and a tab, said resilient member having a first end fixedly attached to said first wall and having a second end connected to said tab, said tab having an inside face in contact with said arc plate.

**Claim 9.** An apparatus for quenching an arc, said apparatus comprising:

a first wall;

a second wall secured in spaced relation to said first wall;

a first slot formed in said first wall and opening toward said second wall;

a second slot formed in said second wall and opening toward said first wall;

an arc plate in slidable communication with said first slot and said second slot;

a locking member secured in spaced relation to said first wall and including a resilient member and a tab, said resilient member having a first end fixedly attached to said first wall and having a second end connected to said tab, said tab having an inside face in contact with said arc plate;

a back stop member secured in spaced relation to said first wall, said back stop member being resilient and deformable, said back stop member being deformed and in contact with said arc plate, whereby said back stop member pushes said arc plate towards said tab;

whereby said arc plate is secured by said first slot, said second slot, said back stop member, and said locking member.

**Claim 10.** The apparatus of Claim 9 wherein said first slot, said second slot, said back stop member, and said locking member form an integral assembly.

**Claim 11.** An apparatus for quenching an arc, said apparatus comprising:

an arc stack housing having a first member secured in spaced relation to a second member, said first member and said second member defining a slot having a back end and an insertion end;

a back stop positioned at said back end, said back stop being resilient;

a locking member positioned at said insertion end;

an arc plate insertable into said slot, whereby said back stop pushes said arc plate against said locking member when inserted into said slot.